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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,558	01/03/2000	Yongjun Hu	11675.130.1	8004

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EXAMINER

LOUIE, WAI SING

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 10/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/476,558

Applicant(s)

HU, YONGJUN

Examiner

Wai-Sing Louie

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-33 and 35-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-33 and 35-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 18, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brady et al. (US 5,066,615) in view of Wolfe et al. (US 5,047,131), newly cited.

With regard to claims 16, 18, and 42-44, Brady et al. disclose a semiconductor structure (col. 2, line 39 to col. 6, line 65 and fig. 1) comprising:

- A semiconductor substrate 11;
- An ARC 21 over the semiconductor substrate comprises a metal silicon nitride (col. 3, line 24), and the metal is selected from the group consisting of Ti, Zr, Mo, Ta, and W (col. 3, lines 23-27), but do not disclose the metal is selected from the group consisting of Sc, Co, Al, and Ni. However, Wolfe et al. disclose by reacting a mixture of aluminum and silicon with the sputtering gas of nitrogen to produce an antireflective coating (Wolfe col. 7, lines 50-65). Wolfe et al. teach the antireflective film and semiconductor device can be produced this way (Wolfe col. 1, lines 14-20). Therefore, it would have been obvious to one with ordinary skill in the art to apply an aluminum silicon nitride film in Brady in order to provide an antireflective coating.

- An ARC 21 having a thickness range from 125 and 750 Å (col. 4, lines 58-59).

With regard to claims 17-33, 36-41, please see the description of record.

Response to Arguments

Applicant's arguments filed 8/30/02 have been fully considered but they are not persuasive.

- The objection of claim 42 is withdrawn in view of the newly cited reference Wolfe et al. (US 5,047,131).
- Applicant argues that reference Fan et al. (US 5,116,427) disclose the titanium-tungsten compound is used as a barrier layer and not as part of the antireflective coating. However, Fan et al. teach any number of the refractory metals, such as titanium-tungsten, have suitable antireflective characteristic (Fan col. 2, lines 34-35 and lines 63-67). Therefore, the antireflective coating compound, WSiN, used in reference Brady et al. (US 5,066,615) could become TiWSiN.
- Applicant argues Brady et al. do not teach or suggest an antireflective coating comprising metal silicon nitride compound with the metal selected from the group Sc, Co, Al, and Ni. However, Brady et al. in view of Wolfe et al. disclose this limitation.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474.

The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

wsl

October 1, 2002

